



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/954,947	09/18/2001	Josef Steininger	13322US01	8515

7590 10/23/2002

Dean D. Small
McAndrews, Held & Malloy, Ltd.
34th Floor
500 W. Madison Street
Chicago, IL 60661

EXAMINER

JUNG, WILLIAM C

ART UNIT

PAPER NUMBER

3737

DATE MAILED: 10/23/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

520

Office Action Summary	Application No. 09/954,947	Applicant(s) STEININGER ET AL.	
	Examiner William Jung	Art Unit 3737	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 September 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) _____ is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 3, 5, 7, 8, 13, 15-17, 19-23, 25, 27, and 28 are rejected under 35

U.S.C. 102(b) as being unpatentable by *Angelsen* (US 4,757,818).

Claims 1, 13, and 21: Angelsen discloses of an ultrasound probe where the transducer array **230** is pivotally mounted within a housing **232** as shown in figure 2. The transducer array **230** pivots around a rotation shaft **226**. The rotation of the transducer array **230** is controlled via motor **206** with motor shaft **228**, which is connected to the rotation shaft **226** by a drive belt **210**. The motor system controls the direction of the ultrasound transmission and reception relative to the central scan plane **14** as shown in figure 1 (col. 2, line 52-59; col. 3, line 64 – col. 4, line 52).

Claims 2, 3, 15, 16, 22, and 23: Angelsen disclose of incremental motor to scan the region of interest with predetermined interval for each increment. The drive shaft couples to belt and gear of the drive motor (col. 2, line 52-68).

Claims 5, 17, and 25: Angelsen discloses of position sensing device for sensing angular position of the transducer array with respect to central scan plane as shown in figure 1 (col. 2, line 65-68).

Claims 7, 8, 19, 20, 27, and 28: Angelsen discloses of centering device where the transducer array **230** is properly aligned with the central scan plane, which is achieved by magnetic sensing device (col. 3, line 33-52).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 4 and 24 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over *Angelsen*.

Angelsen substantially disclosed of all claimed inventions in claims 4 and 24 above. Furthermore, the motor described by Angelsen is mechanical system under control by electrical system. When the motor control is under manual control as claimed in claims 4 and 24, the shaft must be spun via hand. Therefore, it would be obvious to use handcrank mechanism to spin the motor shaft to control the rotation of the transducer.

5. Claims 6, 18, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Angelsen* as applied to claims 1, 13, and 21 above, and further in view of *Yagami et al* (US 5,546,947).

Angelsen substantially discloses of all claimed inventions in claims 6, 18, and 26. In ultrasonic probe, optical sensor is often used along with the ultrasonic transducer array to determine the position of the device. For example, Yagami discloses that and optical sensor (end of fiber optics, for example) can be used in place of or in addition to the ultrasonic transducer 111 (col. 11, line 47-57). Therefore, it would have been obvious to one having an ordinary skill in the art at the time the invention was made to apply the teachings of Angelsen to the teachings of Yagami to achieve the claimed inventions.

Art Unit: 3737

6. Claims 9-12, 14, and 29-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Angelsen* as applied to claims 1, 13, and 21 above, and further in view of *Martin et al* (US 5,398,691).

Angelsen substantially discloses of all claimed inventions in claims 9-12, 14, and 29-32.

Claims 9 and 29: Martin further discloses of transluminal probe where the transducer array is rotated on a rotational axis to scan the surrounding region of interest to acquire 3D information (col. 4, line 36-47).

Claims 10, 11, 30, and 31: Martin also discloses of control knob, which can be viewed as incremental button to control the angle of rotation (col. 4, line 36-47).

Claims 12, 14, and 32: The probe can be placed in a patient via orifice such as esophagus. Thus, it is anticipated that the probe can be placed in a patient via rectal or endovaginal orifice (col. 4, line 36-47).

Martin's transluminal probe clearly anticipates 3D image acquisition, incremental control, and use of the probe via rectal to endovaginal orifice with same scanning mechanism as Angelsen. Therefore, it would have been obvious to one having an ordinary skill in the art at the time the invention was made to apply the teachings of Angelsen to the teachings of Martin to achieve the claimed inventions.

Art Unit: 3737

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William Jung whose telephone number is 703-605-4364. The examiner can normally be reached on Mon-Fri 8:30 AM to 5 PM.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marvin Lateef can be reached on 703-305-3256. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-0758 for regular communications and 703-308-0758 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1148.

William Jung
Examiner
Art Unit 3737

WJ

October 7, 2002


Francis J. Jaworski
Primary Examiner